

Mem. Natn. Sci. Mus. Tokyo, (5), November 30, 1972

Report on a Collection of Opiliones from Poroshiri-dake, Hokkaido

By

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鈴木正将*：北海道幌尻岳のザトウムシ類

The author examined a small collection of Opiliones taken by the Biological Survey of Poroshiri-dake, Hokkaido, conducted by the National Science Museum, Tokyo, 1971. The material includes seven genera and seven species belonging to four families and three suborders. Among them six species that appear to belong to the Palearctic types of Opiliones are hitherto known from Hokkaido (SUZUKI, 1949, 1958, 1965, 1966, 1967; MARTENS & SUZUKI, 1966), and the remaining one, *Peltonychia akamai*, is apparently new to science. This species is a member of the Laniatores which is most flourishing presently through tropical region, but the Travuniidae to which it belongs is limited to Europe and East Asia (Japan and Korea). And the members of the Travuniidae seem to be of the Palearctic type so far as the present distribution is concerned. In this paper a list of the material and the description of a new species will be given.

The author expresses his hearty thanks to the members of the Biological Survey to Poroshiri-dake of the National Science Museum who gave him a chance to study material. He is also indebted to Mr. Hiyoshi AKAMA for his gift of some valuable material which was used in this study.

Suborder DYSPNOI

Family Ischyropsalididae

1. *Nipponopsalis yezoensis* (SUZUKI)

Specimens examined. 1 ♀, Poroshiri-sansō, Poroshiri-dake, 24-VII-1971; 1 ♀, same locality, 27-VII-1971; 1 ♀, same locality, 28-VII-1971. All specimens were collected by J. AOKI.

Distribution. Hokkaido, Honshu (Nippon Alps, new record, altitude: above 1,500m).

2. *Sabacon makinoi* SUZUKI

Specimens examined. 2 ♀, Poroshiri-sansō, Poroshiri-dake, 24-VII-1971, J. AOKI;

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- 1 ♀, same locality, 24-VII-1971, Y. WATANABE; 1 ♀, same locality, 27-VII-1971, J. AOKI.
Distribution. Hokkaido, Honshu.

Suborder EUPNOI

Family P h a l a n g i i d a e

Subfamily Oligolophinae

3. **Oligolophus aspersus** (KARSCH)

- Specimen examined.* 1 pullus, Poroshiri-sansô, Poroshiri-dake, 27-VII-1971, J. AOKI.
Distribution. Saghalien, Hokkaido, Honshu, Shikoku, Kyushu.

4. **Mitopus morio** (FABRICIUS)

- Specimens examined.* 2 subadults, Poroshiri-sansô, Poroshiri-dake, 23-VII-1971; 3 subadults, Poroshiri-dake, 26-VII-1971; 1 subadult, Nanatsunuma-Cirque, 26-VII-1971. All collections made by J. AOKI.

Distribution. Europe, Asia, Spitzbergen, North Africa, Siberia, Persia, China, North America, Saghalien, Hokkaido, Honshu (altitude: above 1,500m).

Family L e i o b u n i d a e

Subfamily Leiobuninae

5. **Leiobunum curvipalpi** ROEWER

- Specimens examined.* 2 pulli, Poroshiri-sansô, Poroshiri-dake, 23-VII-1971; 2 pulli, Poroshiri-sansô to Kita-Cirque, 24-VII-1971. All collections by J. AOKI.
Distribution. Hokkaido, Tohoku, North Kanto.

6. **Nelima genufusca** (KARSCH)

- Specimens examined.* 2 pulli, Poroshiri-sansô; Poroshiri-dake, 23-VII-1971, J. AOKI.
Distribution. Saghalien, Hokkaido, Honshu, Shikoku, Kyushu, Korea.

Suborder GONYLEPTOMORPHI

Superfamily TRAVUNOIDEA

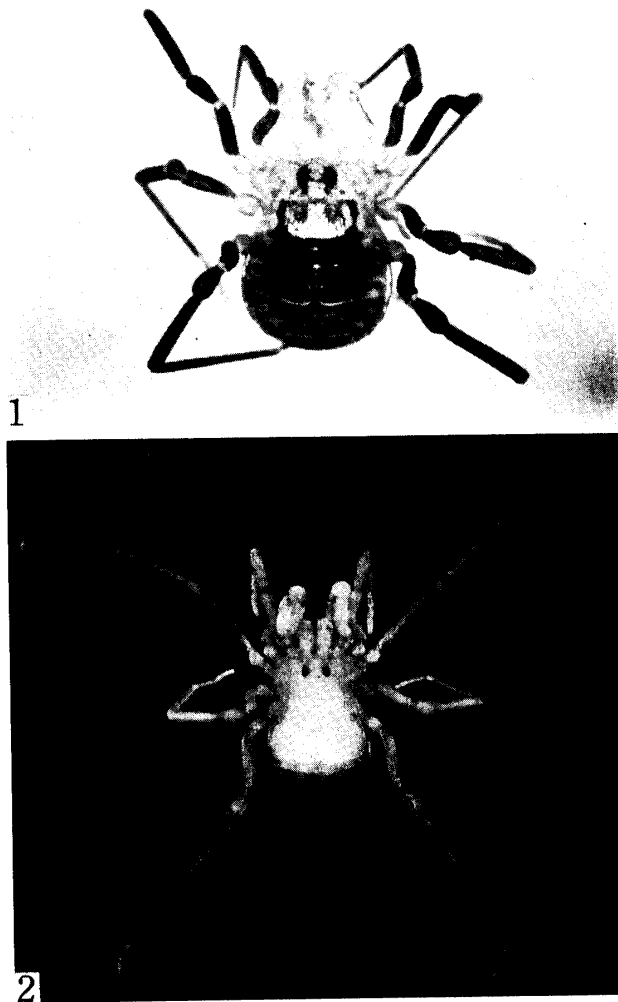
Family T r a v u n i i d a e

7. **Peltonychia akamai** SUZUKI, n. sp.

(Figs. 1-18)

Male:—

Dorsum. Body very small, of short oval outline, lateral margins slightly narrowed



Figs. 1-2. *Peltonychia akamai* n. sp. — 1. Male from Tabayama-mura, Yamanashi Pref.
 — 2. Male from Poroshiri-dake, Hokkaido. (1-2, $\times 11$.)

above the third coxae, and the abdomen broadly rounded posteriorly. Surface of the dorsum including the eye tubercle evenly and very finely granular. The eye tubercle, which is rising only slightly behind the anterior margin of carapace, rounded above, wider than high, completely unarmed except for a few microscopic hairs scattered above. Scutal groove indistinctly developed; five scutal areas and free tergites unarmed throughout, only with very short spine-like hairs arranged in a transverse series along the entire width of each segment.

Venter. Surface of the coxae of all legs, genital operculum and free sternites very finely granular, in addition, some coarse tuberculations on the coxae. Such tuberculations are arranged as shown in Fig. 4. A single marked tubercle arising on the distodorsal surface of coxae I and II; coxa III armed with a row of small humps along the fore and rear ridges. Coxa IV somewhat wider than the others, bearing numerous rounded tubercles on the

prolateral surface, and a row of blunt tubercles on the distal surface of the retro-ventral margin above the spiracle. Maxillary lobes of coxae II clearly outlined, having a conical elevation on the inner portion. Sternum as shown in Fig. 4. Genital operculum somewhat triangular, slightly tapering before.

Chelicera. Small and normal in shape. Proximal segment somewhat raised distally above, smooth. Distal segment armed with small hair-tipped tubercles above, tubercles arranged more or less in two longitudinal rows; a single fairly enlarged, bluntly pointed tooth arising at the middle of the ventral surface, which is followed by a further smaller one just interior to it (Fig. 6).

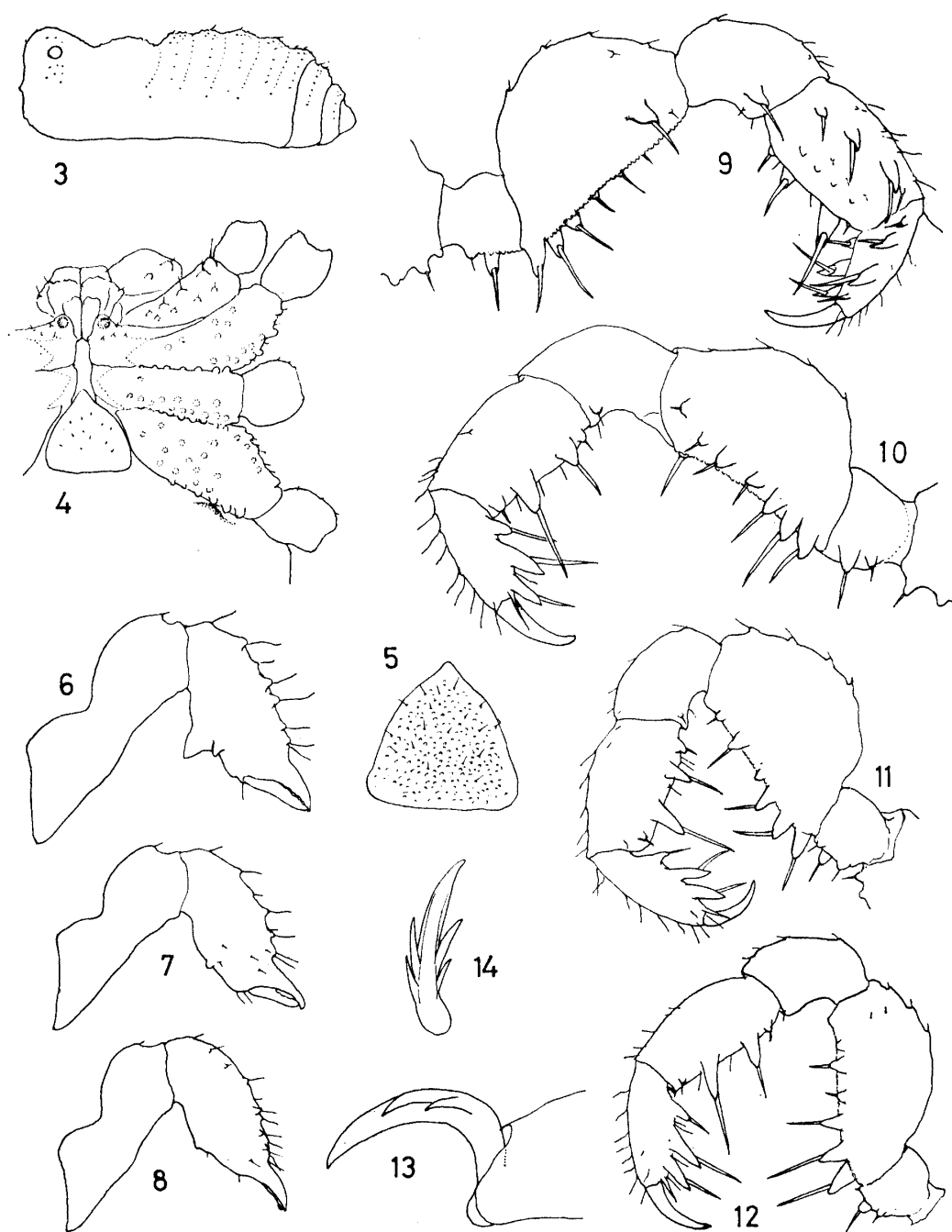
Palpus. Well developed, every segment considerably widened and strongly spined. The coxa is provided ventrally with a conical setose tubercle. Trochanter armed ventrally with two setose tubercles, distal strong, proximal low, unarmed above. Femur extremely widened, widest in the middle; armaments are as follows: dorsally with a row of very low, setose tuberculations disposed widely; ventrally with a diagonal series of 6–7 setose tubercles, proximal three of them being robust; disto-medially with a strong setose tubercle. Patella thickened distally, armed medially with a setose tubercle, and dorsally with a few very small hair-tipped tuberculations. Tibia considerably thickened, flattened dorsoventrally, armed ventrally along both ridges with a row of four setose tubercles, median two strong, proximal and distal low, and a row of minute, rounded tubercles along the median line; dorsally with scattered hair-tipped granules. Tarsus armed ventrally with a row of three strong setose tubercles along both ridges, and with numerous hairs dorsally; tarsal claw shorter than tarsus.

Legs. Trochanters of all legs very finely granular, but without any armaments. Femora I–III nearly straight, only femur IV curved as an S-shape. Femora, patellae, tibiae, metatarsi and tarsi unarmed throughout, clothed only with a few short hairs; in addition, metatarsi and tarsi covered thickly with fine hairs. The metatarsi of all legs are divided by a constriction of the segment into sections, a basal astragalus and a distal calcaneus, the latter of which is very short. Peltonychium of tarsi III and IV as shown in Figs. 13–14, the median claw bearing two pair of lateral branches which are shorter than the median claw itself. Tarsal segmentation: I 3, II 5, III 4, IV 4.

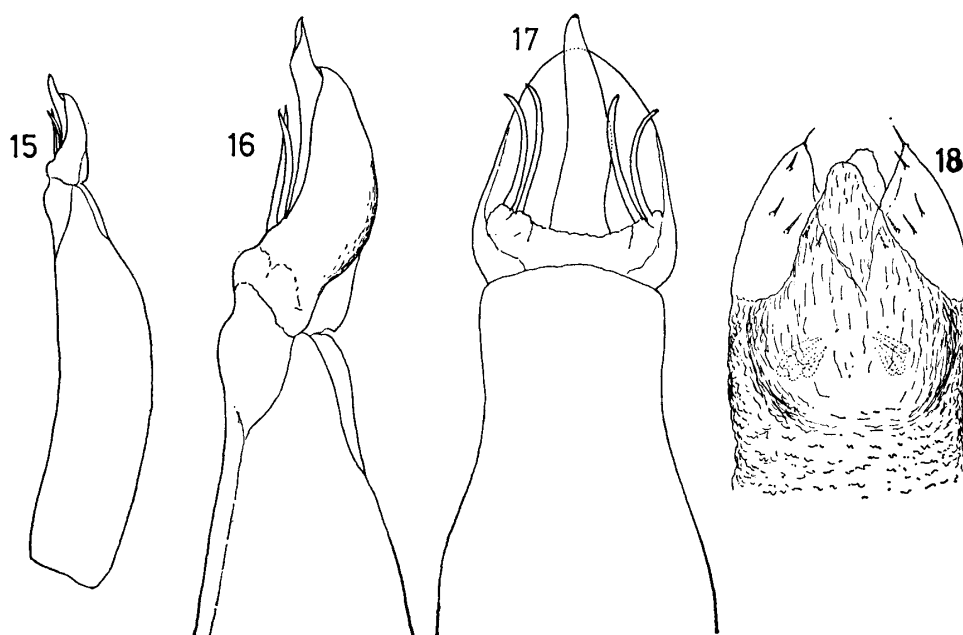
Color. Ground color of the dorsum rusty yellow. Dark brown reticulate markings cover the eye tubercle and the carapace behind the eye tubercle. Median surface of all tergal areas are almost dark to blackish brown, with a very narrow row of light yellowish spots. Hind margin of the scute dark brown, free tergites margined with dark brown. Venter concolorous with the dorsum, free sternites somewhat clouded. Chelicera and palpus rusty yellow entirely. Trochanters and caputs of femora of all legs rusty yellow, remaining leg-segments dark to blackish brown with irregular reticulations, tarsi lighter distally.

Penis. As shown in Figs. 15–17. Corpus penis 0.18 mm wide at widest portion, 0.58 mm long. Corpus penis thickened, slightly narrowed distally, provided with a spoon-like glans, which is armed with two pair of slender and elongated spines at base.

Female.— The female resembles the male in general appearance. However, palpi are less robust than in the male; in particular, the femur and tibia are not so stout



Figs. 3-4. *Peltonychia akamai* n. sp. — 3. Lateral view of scute, ♂, (Yamanashi ex.). — 4. Venter of male (Hokkaido ex.). — 5. Genital operculum, ♂ (Yamanashi ex.). — 6. Left chelicera, medial, ♂ (Yamanashi ex.). — 7. Left chelicera, medial, ♀ (Hokkaido ex.). — 8. Left chelicera, medial, ♀ (Hokkaido). — 9. Left palpus, medial, ♂ (Yamanashi ex.). — 10. Left palpus, lateral, ♂ (Yamanashi ex.). — 11. Left palpus, lateral, ♂ (Hokkaido ex.). — 12. Left palpus, lateral, ♀ (Hokkaido ex.). — 13. Peltonychium of tarsus III, lateral, ♂ (Yamanashi ex.). — 14. Peltonychium of tarsus III, ventral, ♂ (Yamanashi ex.). (3, $\times 20$; 4, 6-12, $\times 40$; 5, $\times 60$; 13-14, $\times 200$.)



Figs. 15–18. *Peltonychia akamai* n. sp. — 15. Penis, lateral (Yamanashi ex.). — 16. Apical portion of penis, lateral (Yamanashi ex.). — 17. Apical portion of penis, ventral (Yamanashi ex.). — 18. Ovipositor, ventral (Hokkaido ex.). (15, $\times 55$; 16–17, $\times 150$; 18, $\times 80$.)

although similar in disposition of the tubercles (compare Fig. 12 with Fig. 11). Ovipositor as shown in Fig. 18, short, the forceps provided with 6 pair of symmetrical setae.

Measurements (mm). ♂ (Loc.: Tabayama, Yamanashi Pref.): Scutum 1.60 long, 1.53 wide at widest portion. Total body length 1.98. Chelicera: Segment I 0.20 wide, 0.43 long; segment II (including fingers) 0.24 W, 0.67 L. Palpus: Trochanter 0.23 wide, 0.27 long; femur 0.36 W, 0.44 high, 0.59 L; patella 0.27 W, 0.35 L, tibia 0.30 W, 0.45 L; tarsus 0.19 W, 0.36 L. Total length 2.02. Tarsal claw 0.25 long.

Length of legs:

	Troch.	Femur	Patella	Tibia	Metat.	Tarsus	Total
I	0.24	0.78	0.35	0.64	0.83	0.48	3.32
II	0.30	1.23	0.45	1.08	1.31	0.84	5.21
III	0.27	0.89	0.38	0.75	1.00	0.50	3.79
IV	0.32	1.20	0.43	0.92	1.47	0.65	4.99

♀ (Loc.: Poroshiri-sansō, Hokkaido): Scutum 1.28 wide, 1.25 long. Total body length 1.95. Chelicera: Segment I 0.17 wide, 0.37 long; segment II 0.14 W, 0.50 L. Palpus: Trochanter 0.18 wide, 0.16 long; femur 0.20 W, 0.23 high, 0.46 L; patella 0.18 W, 0.27 L; tibia 0.21 W, 0.35 L; tarsus 0.15 W, 0.32 L. Total length 1.56.

Length of legs:

	Troch.	Femur	Patella	Tibia	Metat.	Tarsus	Total
I	0.17	0.60	0.27	0.49	0.58	0.43	2.54
II	0.20	0.85	0.34	0.74	0.77	0.75	3.65
III	0.19	0.70	0.27	0.60	0.70	0.47	2.93
IV	0.23	0.80	0.33	0.79	1.04	0.54	3.73

Type-series. Holotype male, Oiwake, Tabayama-mura, Kitatsuru-gun, Yamanashi Pref. (altitude: 1,200m), 16-I-1971, H. AKAMA. Paratypes: 1♂, same as holotype; 1♂, Oomineyama, Tsukiyono-machi, Tone-gun, Gumma Pref., 3-V-1970, H. AKAMA; 1♂, Poroshiri-dake to Kita-Cirque, Hokkaido, 24-VII-1971, J. AOKI; 3♂, 4♀, Poroshiri-sansō, Poroshiri-dake, Hokkaido, 27-VII-1971, J. AOKI.

The holotype and some paratypes will be deposited in Hiroshima University; the remaining paratypes will be preserved in the National Science Museum, Tokyo.

Remarks. This species is close to *Peltonychia japonica* and *P. coreana*. The pelt-onychium of the tarsi III and IV and the penis, however, readily distinguish it from the latter species. Further, the armaments of the ventral surface of the distal segment of chelicera are unique.

Variation. The specimens from Hokkaido are always smaller in body size than those from Honshu although no marked difference exists in leg length. The size (mm) of one male example from Hokkaido is as follows: Scutum 1.10 wide, 1.20 long. Total body length 1.42. Palpus: Trochanter 0.19 wide, 0.18 long; femur 0.24 W, 0.30 high, 0.50 L; patella 0.19 W, 0.27 L; tibia 0.23 W, 0.39 L; tarsus 0.15 W, 0.32 L. Total length 1.66. Tarsal claw 0.23 long. Length of femur: I 0.53, II 0.80, III 0.64, IV 0.89. Total length of legs: I 2.40, II 3.69, III 2.78, IV 3.78. The armament of the ventral surface of the second cheliceral segment is only poorly developed in Hokkaido specimens. There exists a single small tooth at the median portion, and no accessory one. Also, the coloration somewhat differs between the specimens from Hokkaido and Honshu. In general, the body of Hokkaido specimen is light rusty yellow with only a narrow dark band on the scutal areas and free tergites. On the other hand, the tarsal segments were so constant and no exceptions were found as far as the specimens examined (7♂, 4♀) are concerned.

要 約

1971年国立科学博物館が行なった北海道幌尻岳生物調査の採集品のうち、ザトウムシ類の標本を検討し、3亜目・4科・7属・7種を同定し得た。その種名は次のとおりである。

- 1) ツムガタアゴザトウムシ *Nipponopsalis yezoensis* (SUZUKI)
- 2) マキノアゴザトウムシ *Sabacon makinoi* SUZUKI
- 3) トゲザトウムシ *Oligolophus aspersus* (KARSCH)
- 4) スジザトウムシ *Mitopus morio* (FABRICIUS)
- 5) ユミヒゲザトウムシ *Leiobunum curvipalpi* ROEWER

6) ナミザトウムシ *Nelima genufusca* (KARSCH)

7) アカマタテヅメザトウムシ *Peltonychia akamai* SUZUKI, n. sp.

これまで北海道（クナシリ，エトロフ島を除く）からは，2 亜目・3 科・8 属・9 種が知られているが，今回の採集品のうち，アカマタテヅメザトウムシ以外の6種はすべて，北海道の他産地と共通である．アカマタテヅメザトウムシは，北海道から初の有鉤類の発見である．同種は本州の山梨・群馬両県からも発見されたが，北海道と本州間には，交尾器はもとより，サイズや形態的にも僅少の差しか認められない．有鉤類は熱帯に饒産するが，タテヅメザトウムシ科は例外で，ヨーロッパや日本・韓国を含む東アジアのみから知られ，かく現在の分布は旧北区に限られている．それは本来東洋区的な要素であるが，その祖先は非常に古い地質時代にヨーロッパやアジアに進出し，そこで分化したと推察される．しかし，いまでは遺跡的動物として，両地方の洞窟や地中にわずかに残存しているにすぎない．他の6種はいずれも典型的な旧（全）北区系要素であり，しかもすべてが本州と共通である．もっともツムガタアゴザトウムシとスジザトウムシは極度の寒地性の種で，本州ではいまのところ日本アルプスの高所（1,500 m 以上）のみから発見されている．

アカマタテヅメザトウムシは，西日本産のニホンタテヅメザトウムシや韓国産の *Peltonychia coreana* から，第3，4 附節の爪の分枝のもよう，および交尾器の構造などで明瞭に識別することができる．

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